device or method to harness a portion of the energy involved in the normal use of the electronic device.

7. Alternative Embodiments

[0047] The user interface system of an alternative embodiment of the invention omits the display **150**. The user interface system of the alternative embodiment is otherwise similar or identical to the user interface system **100** of the preferred embodiment. The user interface system of the alternative embodiment can be incorporated into electronic devices that do not typically include a display, such as peripheral for an electronic device. Suitable peripherals include a mouse, a trackpad, a keyboard, and a remote control. These peripherals are often used only by touch, and not by sight. The user interface system may, however, be incorporated in any suitable device.

[0048] As a person skilled in the art of user interfaces will recognize from the previous detailed description and from the figures and claims, modifications and changes can be made to the preferred embodiments of the invention without departing from the scope of this invention defined in the following claims.

We claim:

1. A user interface comprising:

a layer of a singular structure partially defining a cavity, the layer comprising a deformable region adjacent the cavity and an undeformable region adjacent the deformable region, the layer further comprising an outer tactile surface continuous over the deformable and undeformable regions and substantially planar over the undeformable region, and the layer partially defining a fluid channel configured to communicate fluid into the cavity in a direction substantially parallel to a portion of the tactile surface;

a support member extending into the cavity and configured to support the deformable region against inward;

a displacement device configured to displace fluid through the fluid channel and into the cavity to transition the deformable region between:

a retracted setting, wherein the tactile surface at the deformable region is flush with the tactile surface at the undeformable region; and

an expanded setting, wherein the tactile surface at the deformable region is offset from the tactile surface at the undeformable region; and

a sensor coupled to the layer and configured to detect an input at the tactile surface.

2. The user interface of claim **1**, wherein the layer is of a singular structure further comprising the support member.

3. The user interface of claim **1**, further comprising a substrate coupled to the layer opposite the tactile surface and defining a portion of the cavity.

4. The user interface of claim **1**, further comprising a sheet arranged over the tactile surface, wherein the layer comprises a first material and the sheet comprises a second material.

5. The user interface of claim **1**, wherein, in the expanded setting, the tactile surface at the deformable region is elevated above a portion of the tactile surface at the undeformable region.

6. The user interface of claim **5**, wherein, in the expanded setting, the tactile surface at the deformable region defines one of: a button, a ridge, a ring, a slider, a pointing stick, and a guide.

7. The user interface of claim **1**, wherein a face of the cavity opposite the tactile surface defines a back surface at the deformable region, wherein the back surface is in contact with the support member in the retracted setting.

8. The user interface of claim **7**, wherein, in the expanded setting, the back surface is lifted off of the support member.

9. The user interface of claim **7**, wherein the support member defines a fluid conduit configured to communicate fluid to the back surface.

10. The user interface of claim **9**, wherein the deformable region, between the back surface and the tactile surface, is of a thickness substantially resisting excursion into the fluid conduit.

11. The user interface of claim **10**, wherein the fluid conduit is substantially circular in cross-section at the support member, and wherein the thickness of the deformable region is approximately the diameter of the fluid conduit.

12. The user interface of claim **1**, further comprising a reservoir coupled to the displacement device and configured to contain fluid.

13. The user interface of claim **1**, wherein the sensor comprises a capacitive touch sensor.

14. The user interface of claim **1**, wherein the sensor is coupled to the layer opposite the tactile surface.

15. The user interface of claim **1**, further comprising a display coupled to the layer and configured to visually output an image through the tactile surface.

16. The user interface of claim **15**, wherein the display is configured to output the image that is an input key substantially aligned with the deformable region.

17. The user interface of claim **1**, wherein the displacement device is a pump.

18. The user interface of claim **1**, wherein the displacement device is further configured to displace fluid out of the cavity to transition the deformable region from the expanded setting to the retracted setting.

19. The user interface of claim **1**, further comprising a processor coupled to the sensor and configured to interpret an input that is a touch on the tactile surface as:

a first input type when the deformable region is in the retracted setting; and

a second input type when the deformable region is in the expanded setting.

20. The user interface of claim **1**, wherein the layer further partially defines a second cavity and a second fluid channel configured to communicate fluid into the second cavity, wherein the layer further comprises a second deformable region adjacent the second cavity and a second undeformable region adjacent the second deformable region, wherein the displacement device is further configured to displace fluid through the second fluid channel and into the second cavity to transition the second deformable region between a retracted setting and an expanded setting.

21. The user interface of claim **20**, wherein the displacement device is further configured to selectively transition the deformable region and the second deformable region between the retracted and expanded settings.